

ABSTRACT OF THE DISCLOSURE

The present invention provides several methods for improving the high and low shear rheology of a substantially grit-free and substantially dispersed particulate slurry using a rotor-stator type mill. The methods are applicable to slurries including a natural mineral, suspensions including a natural mineral, and suspensions including synthetic minerals. The methods of the present invention selectively include performance of one or more of the processes of beneficiation, re-milling, dewatering and re-dispersion, and drying, performed in any one of several sequences as disclosed or suggested herein. The present invention further provides a number slurry products having an improved high and/or low shear rheology that are produced by the performance of different combinations